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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,087	07/06/2001	Ahmad Chini	3927P015	5864

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EXAMINER

KIM, KEVIN

ART UNIT PAPER NUMBER

2638

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/900,087

Applicant(s)

CHINI ET AL.

Examiner

Kevin Y. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 24-34 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 1-7, 14-21 and 24-34 is/are allowed.
6) ☒ Claim(s) 8-13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 3-18-2005 have been fully considered but they are not persuasive.

Applicants argue that the Schill patent is “merely directed to a technique for reduction of the peak to average of the signal” while the claimed wave shaving filter alters “power levels of side lobes associated with resultant sub-carrier signals.” Attention is drawn to col.4, lines 24-39 of the Schill patent, that elaborates on the pulse shaping filter (106a). The function of the raised cosine filter or root raised cosine filter, used as a pulse/wave shaping filter, is to reduce the side lobes of a carrier signal.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Schill et al (US 6,751,267 cited previously).

Consider claims 8. Referring to Fig.3, Schill et al discloses a method of producing a multi-carrier signal, comprising the steps of;

receiving an input frame of data samples (104),

performing frequency domain modification on the data samples using a wave shaping filter (106a), see col. 4, lines 24-27, and col.4, lines 24-39 describing that the pulse shaping filter

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(106a), constructed with raised cosine filter or root raised cosine filter reduces the side lobes of a carrier signal depending on the chosen roll-off factor and,

modulating the frequency-modified data samples onto a plurality of carriers (116).

Regarding claim 9, the transmit pulse filter bank reads on “a wave shaping filter” since raised cosine filters or root raised cosine filters, taught by Schill, modifies the frequency spectrum of the data samples. See col. 4, lines 26-39.

Regarding claim 10, raised cosine filters or root raised cosine filters, used by Schill et al, are a type of a finite impulse response (FIR) filter.

Regarding claim 11, the raised cosine filters or root raised cosine filters are essentially band limiting filters, thus reading on “a spectrum mask” to perform frequency domain modification.

Regarding claim 12 calling for [inverse] Fourier transform on the frequency modified data samples, see Inverse Fourier Transform block (116) in Fig.3 that performs the claimed function.

Claim Rejections - 35 USC § 103

4. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schill et al as applied to claim 8 above, in view of Rapeli (US 6,167,237).

Schill et al disclose all the claimed subject matter, as explained above in connection with base claim 8, but for “controlling said frequency domain modification to achieve a desired spectrum for said modulated multi-carrier signal.” Rapeli teaches adjusting a transmit filter characteristics depending on interference detected. See col. 3, lines 1-17 and col. 4, line 67 –

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col.5, line 20. Thus, it would have been obvious to one skilled in the art at the time the invention was made to control the frequency-modifying filter of Schill et al for the purpose of allowing the use of a less complex filter, that saves power, in the case of no interference detection, as taught by Rapeli.

Allowable Subject Matter

5. Claims 1-7, 14-21,24-34 are allowed.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wahlqvist et al (US 6,088,398) discloses a pulse shaper coupled to a modulator.

Hess et al (US 5,170,413) discloses a pulse shaping filter coupled to a multi-carrier modulator.

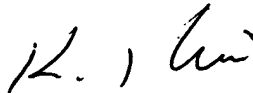
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Venderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KEVIN KIM
PATENT EXAMINER

A handwritten signature in black ink, appearing to read "K. Kim", is written below the printed name and title.